1) Chondroitin sulfate/(GlcA-GalN)n

	. ,	$R' = -H/-SO_3^-$
-Canalyll	CH <sub>2</sub> OH 0	HNCOCH <sub>3</sub>
ii(Viido-Cailo)/aiiir	HOOS	<b>—</b>

2) Dermatan sulfate/(IdoA/GlcA-GalN)n

$$\begin{pmatrix} c_{OOH} \\ c_{OOH} \\ c_{OH} \end{pmatrix} = \begin{pmatrix} c_{H_2OH} \\ c_{OH} \\ c_{OH} \\ c_{OH} \end{pmatrix} = \begin{pmatrix} c_{H_2OH} \\ c_{OH} \\ c_{OH} \\ c_{OH} \\ c_{OH} \end{pmatrix} = \begin{pmatrix} c_{H_2OH} \\ c_{OH} \\ c_{$$

3) Heparan sulfate/(GlcA/IdoA-GlcN)n

$$\begin{array}{c|c} \text{COOH} & \text{CH}_2\text{OR}' \\ \text{OH} & \text{OH} & \text{CH}_2\text{OR}' \\ \text{OSO}_3 & \text{HNR} & \text{R'=-H/-SO}_3^- \end{array}$$

1

 $R = -SO_3 / -COCH_3$  $R = -H / -SO_3$ 

5) Keratan sulfate/(Gal-GlcN)n

6) Hyaluronic acid/(GlcA-GlcN)n

7) Dextran sulfate/(Glc-Glc)n

APPROVED	O.G. FIG.				
BY	CLASS	SUBCLASS			
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## FIG. 2

1) High Mannose Type

$$Man\alpha 1 \rightarrow 2Man\alpha 1$$
 $6$ 
 $Man\alpha 1 \rightarrow 2Man\alpha 1$ 
 $6$ 
 $3$ 
 $Man\beta 1 \rightarrow 4GlcNAc\beta 1 \rightarrow 4GlcNAcβ 1 \rightarrow Asn$ 
 $Man\alpha 1 \rightarrow 2Man\alpha 1 \rightarrow 2Man\alpha 1$ 

2) Complex Type

Fuc
$$\alpha$$
1 6

Gal $\beta$ 1  $\rightarrow$ 4GlcNAc $\beta$ 1  $\rightarrow$ 2Man $\alpha$ 1 6

Man $\beta$ 1  $\rightarrow$ 4GlcNAc $\beta$ 1  $\rightarrow$ 4GlcNAc $\beta$ 1  $\rightarrow$ 4SlcNAc $\beta$ 1  $\rightarrow$ Asn

Gal $\beta$ 1  $\rightarrow$ 4GlcNAc $\beta$ 1  $\rightarrow$ 2Man $\alpha$ 1 7

The fuc $\alpha$ 1 8

Fuc $\alpha$ 1 8

Fuc $\alpha$ 1 7

Fuc $\alpha$ 1 8

Fuc $\alpha$ 2 8

Fuc $\alpha$ 2 8

Fuc $\alpha$ 2 8

Fuc $\alpha$ 3 8

Fuc $\alpha$ 4 8

F

3) Hybrid Type

GallNAcα1→Ser/Thr

NeuAcα2→6GalNAcα1→Ser/Thr

1) Type I Core

Galβ1→3GalNAcα1→Ser/Thr

NeuAcα2→3Galβ1→3GalNAcα1→Ser/Thr

-6 Galβ1→3GalNAcα1→Ser/Thr NeuAcα2/\*3

<sup>\*</sup>6 GalNAcαl→Ser/Thr Fucαl→3Galβl ✓ <sup>3</sup>

 $GaINAc\beta1 - 4GaINAc\beta1 - 3GaI\beta1 - 4GaI\beta1 / 3$ 

(→8NeuGco2)n

2) Type II Core NeuGco2

3) Type III Core

¯6GalNAcαl→Ser/Thr Galβ1→4GlcNAcβ1✓3 Neu Aco2

NeuAcα2→3Galβ1→4GlcNAcβ1→3GalNAcα1→Ser/Thr

Fucal

4) Type IV Core

\_GalNAcαl →Ser/Thr GlcNAcB1,

NeuAcα2→3Galβ1→4GlcNAcβ1√3

5) Type V Core

Galα1→4Galβ1→4Galβ1→4GlcNAcβ1

GalNAcα1→3GalNAcα1→Ser/Thr NeuAco2→3Galβ1 ✓3

		•			
APPROVED	O.G. FIG.				
, BY	CLASS	SUBCLASS			
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A) SDS-Denatured Electrophoregram of

S/FGF-1a-II Protein

109 k

80 k

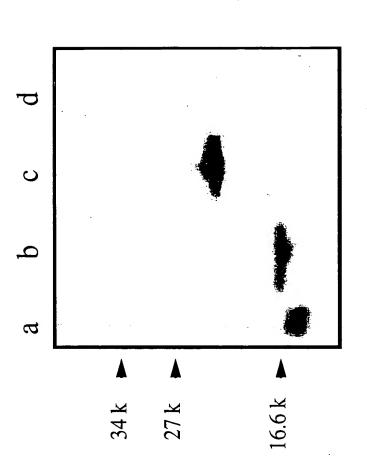
51 k

34 k

27 k

FIG. 4

B) SDS-Denatured Electrophoregrams of N-FGF-1a-1V and O-FGF-1a Proteins

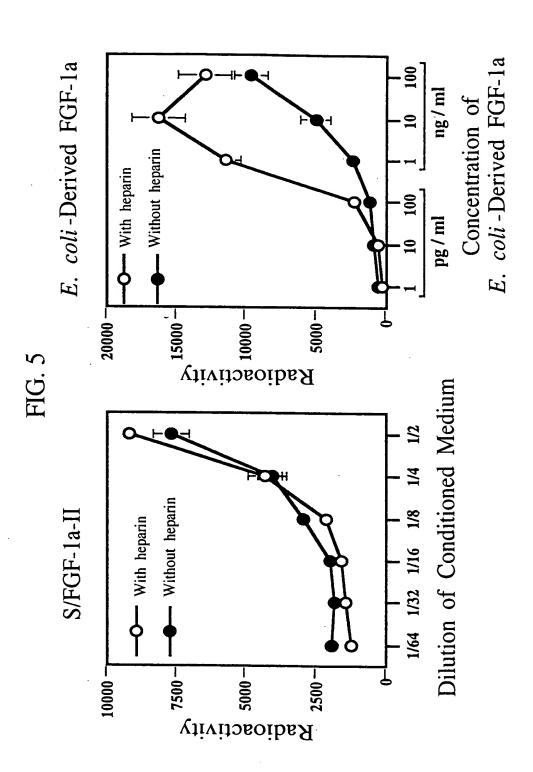


Lane a: FGF-1a produced in *E. coli*Lane b: N-FGF-6/1a-II treated with peptide N-glycosidase
F to remove N-linked sugar chains

Lane c: N-FGF-6/1a-II

Lane d: O-FGF-6/1a

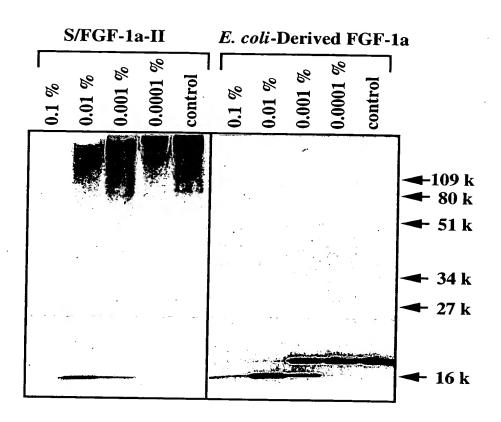
APPROVED	O.G. FIG.					
BY	CLASS SUBCLASS					
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APPROVED O.G. FIG. BY CLASS SUBC		•								
	E. coli-Derived FGF-1a	<ul><li>■ Without heparin</li><li>■ With heparin</li></ul>							50% 100%	Relative Activity
FIG. 6	E. CC		70℃, 30 min -	56°C, 30 min	Room Temp., 12 hr -	pH 10, 12 hr	pH 4, 12 hr	pH 7, 12 hr - (Control)	%0 L	Re
·			700		- Room	Н д	7 Hd -	7 Hd - Co	0%0	tivity
	S/FGF-1a-II	Without heparin With heparin		1			1		100% 50%	Relative Activity

APPROVED	O.G. FIG.					
ΒÝ	CLASS	SUBCLASS				
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FIG. 7

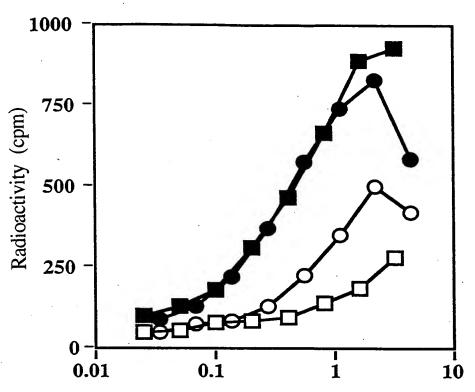


APPROVED O.G. FIG.

BY CLASS SUBCLASS

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FIG. 8



Concentration of FGF-Like Proteins (ng/ml)

E. coli-Derived FGF-1a/with heparin

E. coli-Derived FGF-1a/without heparin

N-FGF-6/1a-IV/with heparin

N-FGF-6/1a-IV/without heparin

FIG. 9 0.15 M

Absorbance (280 nm)

Elution Volume

Salt Concentration